

## REMARKS

The undersigned would like to thank Examiner Tran for the courtesy he extended during the personal interview of November 9, 2004. During that interview, the undersigned drew out a few distinctions between the applied prior art and the present invention, emphasizing the features illustrated in Figure 7 recited in the above new claims 20-32. With respect to the general subject matter of these claims, the Office had previously applied the Crowley patent (U.S. Patent No. 2,859,504) and the Ratliff patent (U.S. Patent No. 3,815,959). To the extent that the rejection might be viewed as applicable to the pending claims, they will be discussed below, to summarize the conversation with the Examiner and to expedite prosecution.

### The Crowley Patent

The Crowley patent is directed to a process of making pre-stressed concrete structures, which includes a concrete girder 10 in which are embedded two reinforcing and pre-stressing rods 15 and 16. The rods 15 and 16 extend entirely through the beam, from end to end, as shown in Figure 2. In addition, the girder has a recess 14 to expose threaded ends of four reinforcing rods 17, which are shorter than the pre-stressing rods 15 and 16. As explained in column 2, lines 45-50 and again with reference to Figure 1 in column 3, lines 10-18, the shorter rods 17 are to compress the concrete between piers to eliminate a portion of the pre-stressing near the end of the beam. These shorter rods 17 are said to reduce the tension on the top fibers to a point where parabolic cables are unnecessary. Stated differently, as illustrated by the parabolic dashed line in Figure 1, the purpose of the short rods 17

is to create a compression profile to mimic the effect of a parabolic rod, which was apparently difficult to achieve in the 1950s.

It should be evident from Figure 7 that the shorter rods do not create a tension from one end to the other of the girder but in fact compress only a portion of the girder in order to achieve the object of the Crowley patent, i.e., the mimicing of the effect of parabolic rods.

Another aspect of the Crowley patent which is repeatedly emphasized is that this recess is to be filled with a cast block of concrete in an area free from tension. See column 2, lines 62-64, column 3, line 3 and column 3, lines 12-16.

#### The Ratilff Patent

The Ratliff patent is designed to reduce the necessary degree of strength in rods used for pre-stressing concrete. It is done by placing the rods outside the girder itself and adding hinges 30 and hinge plates 32, 32'. In this way, it is said that this hinge plate 32, 32' or strut being placed at a point of flexing results in substantially less bending, thereby reducing the need for strength in the rods. The Ratliff patent also discloses a turnbuckle 26.

#### The Hypothetical Combination

One of ordinary skill in the art would not be motivated to combine the references insofar as combining the references would destroy the purpose of one or the other or both of the applied references. As such, a *prima facie* case of obviousness has not been achieved. See *In re Gordon*, 733 F.2d 900, 221 USPQ

1125 (Fed. Cir. 1984). Specifically, the purpose of the Crowley patent is to have the reinforcing rods 17 that are tensioned after manufacture create compression in only portions of the girder 10. The tension they create is quite intentionally not designed to extend from one end to the other of the girder. Therefore, adopting a turnbuckle structure in the Crowley patent would make no sense, and in fact would destroy the very purpose of the Crowley patent. Likewise, the Ratliff patent requires external rods to permit movement of the rods and hinges so as to minimize stress at bend points. This could not be done if the rods were within the girder.

In short, it is respectfully submitted that no combination of the Crowley or Ratliff patent would result in the presently claimed invention based on the disclosures thereof. At best, the Ratliff patent may suggest replacement of the two reinforcing or pre-stressing rods 15 and 16 that extend from one end to another to an external pre-stressing rod, but those pre-stressing rods would not be found in an open area and would not met the present claim recitations.

In marked contrast to the applied art and its hypothetical combination, the present invention has non-tensioned wires that are tensioned via access through an open area, the tension extending from one end of opposite longitudinal ends of the girder, as recited in the above claims.

The Crowley patent is very explicit in that the recess is to be filled with a material, whereas the present invention as recited in claims 27 and 30 recite that these open areas are to remain open after the girder is put in place. In this manner, the present invention permits later tensioning of the girder to adjust for the effects of aging, etc.

Finally, it is noted that the Examiner previously imposed a restriction requirement between claims that recited a girder and claims that recited a bridge which incorporated the girder. Applicants have added dependent claims to building structures (e.g., bridge or building) comprising the girder of other claims in hope that these claims will be accepted and examined at this time. It is believed that no additional search is required insofar as the applied art is intended for building structures and these new dependent claims recite bridges and more generically, building structures.

In light of the foregoing, applicants respectfully request reconsideration and allowance of the above-captioned application. Should any residual issues exist, the Examiner is invited to contact the undersigned at the number listed below.

Respectfully submitted,

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